

report10045150.txt

-----claim tree-----

1----2
+-----8-----9
 +-----11
 +-----10
+-----6-----7
+-----4-----5
+-----3

12----13
+-----29
+-----28
+-----27
+-----26
+-----25
+-----24
+-----23
+-----22
+-----17-----18
 +-----21
 +-----20
 +-----19
+-----16
+-----15
+-----14

-----112-----

-----best-----

6001795;5741901;5981738;5871573;6017862;5962383;5573702;6060439;5994283;4822514;5604195;5486307;4929533;5108643;5736496;5075026

5414144
6576324
5002680
5076954
6579826
6572228
6565953
6225398
5158766
6248162
5082584
6509132
5531818
6387871
6579655
6548233
4414128
5389282
6576400
4283384
4540505
6166173
6468961
6316142
4622303
6461631
6130200
4456572
6573033
5663259
4247330
6548449
5321152
5403509

-----classlist-----

510/365;510/506;510/417;510/238;510/432;510/424;347/100;510/201;510/245;510/176;134/40;510/421;134/38;428/195;510/405;510/407;510/426

106/3113
510/101
510/174
510/463
510/434
510/433
510/427
510/362
510/437
510/352
510/164
516/58
510/104
510/108
510/416
510/360
510/400
510/235
510/470
430/200
510/242
516/74
510/488
510/505
510/503
510/351
430/201
347/212
510/340
510/175
510/123
510/490
134/42
516/7
510/237
510/431
510/479
510/106
516/66
516/6
510/163

-----keywords-----

recording rub calcium acetate monomethyl ether butyl glycol mek propyl acetate butyl lactate barium zinc acetate magnesium acetate zinc chloride magnesium chloride glycol ether nmp pyrrolidone dimethyl ether glycol dimethyl dimethyl dipropylene glycol dipropylene tripropylene glycol tripropylene methyl ether glycol methyl propylene glycol propylene glycol ethers butyl carbitol carbitol ethers cyclic acetone ketones ethyl lactate lactate acetate ethyl butyl acetate ethyl acetate N-methyl pyrrolidone pyrrolidone N-methyl anion zinc calcium divalent emulsified phase emulsion phase organic aqueous emulsion emulsion acidic acrylic resin acrylic colorant rubbing coalescence swelling metallic salt metallic polyvalent water-based printing ink pretreatment reagent pretreated motion applies non-porous porosity trivalent RCOO -and methyl-ethyl-ketone liquid salt polymer dry drying wet vinyl ether resin methyl aqueous cations cation esters ethyl glycol acetate propyl butyl tetrahydrofuran Ethanol non woven woven detergent deionized butyl ether ethylene glycol spreading samples evaporated stabilized exposure promote favorable hydrocarbon chain chain hydrocarbon bonded anions water-soluble polymer backbone liquids phase separation on separation jet ink thermal stability thermally stable thermally interaction scratch cationic surfactant cationic amide nitrogen atom nitrogen heterocyclic unsaturated saturated anionic surfactant surfactant tension reactive reactant depositing inorganic metal ions carboxyl anionic colorants metal ion water-soluble polymeric polymeric droplets dispersion water-insoluble pigments dyes pigment dispersed organic solvent dissolved water-soluble dye water-soluble ink jet dimethyl ether glycol dimethyl dimethyl dipropylene glycol dipropylene tripropylene glycol tripropylene methyl ether glycol methyl propylene glycol propylene glycol ethers butyl carbitol carbitol ethers cyclic acetone ketones ethyl lactate lactate acetate ethyl butyl acetate ethyl acetate N-methyl pyrrolidone pyrrolidone N-methyl anion zinc calcium divalent emulsified phase emulsion phase aqueous emulsion acidic acrylic resin acrylic colorant metallic salt metallic

-----references-----

----- 6001795
classes:1 510/365 1 510/238 1 510/424 1 510/437 1 510/506
score: 430

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keywords: monomethyl ether;magnesium chloride;glycol ether;dipropylene glycol;dipropylene;tripropylene glycol;tripropylene;propylene glycol;propylene;glycol ethers;ethers;ethyl lactate;lactate;calcium;divalent;phase;organic;emulsion;acidic;polyvalent;liquid;salt;polymer;ether;methyl;aqueous;cations;cation;esters;ethyl;glycol;butyl;Ethanol;detergent;ethylene glycol;chain;hydrocarbon;anions;liquids;unsaturated;saturate d;anionic surfactant;surfactant;tension;inorganic;carboxyl;anionic;droplets;dispersion;dyes;dispersed;water-soluble;dipropylene glycol;dipropylene;tripropylene glycol;tripropylene;propylene glycol;propylene;glycol ethers;ethers;ethyl lactate;lactate;calcium;divalent;phase;acidic;precipitate;organic;metal salt;polyvalent metal;polyvalent;emulsion;Inventors;

- alkyl group has 1 to 6 carbon atoms, 1 methoxy-2-propanol, 1 methoxy-3-propanol, and 1 methoxy 2-, 3- or 4-butanol.
- Representative members of the polypropylene glycol include **dipropylene** glycol and polypropylene glycol having a molecular weight of 150 to 1000, e.g., polypropylene glycol 400. Other satisfactory **glycol** **ethers** are ethylene glycol monobutyl ether (butyl cellosolve), diethylene glycol monobutyl ether (butyl **carbitol**), triethylene glycol monobutyl ether, mono, di, tri **propylene glycol** monobutyl ether, tetraethylene glycol monobutyl ether, mono, di, **tripropylene** glycol monomethyl ether, **propylene** glycol monomethyl ether, ethylene glycol monohexyl ether, diethylene glycol monohexyl ether, **propylene glycol** tertiary butyl ether, ethylene glycol monoethyl ether, ethylene glycol monomethyl ether, ethylene glycol monopropyl ether, ethylene glycol monopentyl ether, diethylene glycol monomethyl ether, diethylene glycol monoethyl ether, mono, di, tributylene glycol monoethyl ether, mono, di, tributylene glycol monopropyl ether, mono, di, tributylene glycol monobutyl ether, mono, di, tributylene glycol monopentyl ether and mono, di, tributylene glycol monohexyl ether, ethylene glycol monoacetate and **dipropylene** glycol propionate. These glycol type cosurfactants are at a concentration of 0.1 to 10 weight %, more preferably 0.5 weight % to 7 weight %.

While all of the aforementioned glycol ether compounds provide the described stability, the most preferred cosurfactant compounds of each type, on the basis of cost and cosmetic appearance (particularly odor), are **dipropylene** glycol monomethyl ether and diethylene glycol monobutyl ether. Other suitable water soluble cosurfactants are water soluble esters such as **ethyl** **lactate** and water soluble carbohydrates such as butyl glycosides.

The amount of cosurfactant required to stabilize

----- 5741901
classes:1 536/76 1 526/2382 1 526/23821 1 527/311 1 527/313 1 527/314 1 536/69
score: 398

keywords: rub;propyl acetate;dimethyl;tripropylene;propylene glycol;propylene;ethers;acetone;ketones;butyl acetate;N-methyl;zinc;calcium;organic;acrylic;rubbing;water-based;reagent;liquid;salt;polymer;dry;dryin g;wet;vinyl;resin;methyl;aqueous;esters;ethyl;glycol;acetate;propyl;butyl;ethylene glycol;samples;evaporated;exposure;backbone;unsaturated;saturated;reactive;inorganic;carboxyl;dispersion;pigment;dispersed;organic solvent;dissolved;dimethyl;tripropylene;propylene glycol;propylene;ethers;acetone;ketones;butyl acetate;N-methyl;zinc;calcium;acrylic;precipitate;solids;rubbing;organic;water-based;reagent;print;rubbed;

- pitate can be filtered or centrifuged and washed with water, preferably at a temperature of about 10.degree. C. to 90.degree. C.
- Alternatively, the modified cellulose esters of the present invention can be prepared by dissolving the cellulose ester in an **organic** solvent devoid of carboxylic acids and reacting it with maleic anhydride in the presence of a proton acceptor. The reaction is heated and the product precipitated by mixing a non-solvent with the reaction mixture. The product is then isolated by filtration, washed with water, and dried. In this regard, suitable **organic** solvents include **ketones** such as **acetone**, 2-butanone, 2-pentanone, cyclohexanone; esters such as methyl, ethyl, propyl, iso-propyl, isobutyl, and butyl esters of lower alkyl carboxylic acids; **ethers** such as diethyl and dibutyl **ethers**, dialkyl **ethers** of glycols such as **dimethyl**, dipropyl, and dibutyl glycols of ethylene and **propylene** glycols, tetrahydrofuran, and dioxane; dialkyl esters of lower alkyl monocarboxylic acids of ethylene and **propylene glycol**'s such as diacetyl, dipropionyl, dibutyl esters of ethylene and **propylene glycol**'s; sulfoxides such as sulfolane, **dimethyl** sulfoxide and diethyl sulfoxide; dialkylamides of formic, acetic, and propionic acids, **N-methyl** pyrrolidinone; and chlorinated hydrocarbons such as methylene chloride, chloroform, and

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chlorobenzene.

The solvent:cellulose ester ratio by weight is generally from about 1:1 to about 20:1, preferably about 2:1 to about 5:1.

The proton acceptor can be, for example, a trialkyl amine such as trimethylamine, triethylamine, tripropylamine, tributylamine, or a mixture thereof; alkyl substituted pyrrolidines and piperidines; dialkyl anilines; pyridine and alkyl substituted pyridines; and inorganic alkaline and alkaline earth carbonates. Such proton acceptors are preferably present in a proportion of about 0.1:1 to

----- 5981738
classes:1 536/76 1 526/2382 1 526/23821 1 527/311 1 527/313 1 527/314 1 536/69
score: 396

keywords: rub;propyl acetate;dimethyl;tripropylene;propylene glycol;propylene;ethers;acetone;ketones;butyl acetate;N-methyl;zinc;calcium;organic;acrylic;rubbing;water-based;reagent;liquid;salt;polymer;dry;dryin g;wet;vinyl;resin;methyl;aqueous;esters;ethyl;glycol;acetate;propyl;butyl;ethylene glycol;samples;evapora ted;exposure;backbone;unsaturated;saturated;reactive;inorganic;carboxyl;dispersion;pigment;dispersed;orga nic solvent;dissolved;dimethyl;tripropylene;propylene glycol;propylene;ethers;acetone;ketones;butyl aceta te;N-methyl;zinc;calcium;acrylic;precipitate;solids;rubbing;organic;water-based;reagent;print;rubbed;

- then
isolated by filtration, washed with water, and dried. In this regard, suitable **organic** solvents include **ketones** such as **acetone**, 2-butanone, 2-pentanone, cyclohexanone; esters such as methyl, ethyl, propyl, iso-propyl, isobutyl, and butyl esters of lower alkyl carboxylic acids; **ethers** such as diethyl and dibutyl **ethers**, dialkyl **ethers** of glycols such as **dimethyl**, dipropyl, and dibutyl glycols of ethylene and **propylene** glycols, tetrahydrofuran, and dioxane; dialkyl esters of lower alkyl monocarboxylic acids of ethylene and **propylene glycol**s such as diacetyl, dipropionyl, dibutyl esters of ethylene and **propylene glycol**s; sulfoxides such as sulfolane, **dimethyl** sulfoxide and diethyl sulfoxide; dialkylamides of formic, acetic, and propionic acids, **N-methyl** pyrrolidinone; and chlorinated hydrocarbons such as methylene chloride, chloroform, and chlorobenzene.

The solvent:cellulose ester ratio by weight is generally from ab

----- 5871573
classes:1 106/1627 1 106/16271 1 106/16272 1 106/16801 1 106/1711
score: 387

keywords: rub;propyl acetate;dimethyl;tripropylene;propylene glycol;propylene;ethers;acetone;ketones;butyl acetate;N-methyl;zinc;calcium;organic;acrylic;rubbing;water-based;reagent;liquid;salt;polymer;dry;dryin g;wet;vinyl;resin;methyl;aqueous;esters;ethyl;glycol;acetate;propyl;butyl;ethylene glycol;samples;evapora ted;exposure;backbone;unsaturated;saturated;reactive;inorganic;carboxyl;dispersion;pigment;dispersed;orga nic solvent;dissolved;dimethyl;tripropylene;propylene glycol;propylene;ethers;acetone;ketones;butyl aceta te;N-methyl;zinc;calcium;acrylic;precipitate;solids;rubbing;organic;water-based;reagent;print;rubbed;

- lvents include, but are not limited to **ketones**, esters, chlorinated hydrocarbons, aqueous buffer solutions, and mixtures thereof. Specific examples include, but are not limited to **acetone**, 2-butanone, 2-pentanone, **ethyl acetate**, propyl acetate, **butyl acetate**, methyl alcohol, ethyl alcohol, ethylene glycol monoethyl ether, and mixtures thereof. Also, further suitable solvents can be of the ethylenically unsaturated type that, in addition to dissolving the modified cellulose ester, can crosslink with the cellulose upon exposure to UV radiation in the presence of a photoinitiator. Specific examples include, but are not limited to, ethyl(meth)acrylate, methyl(meth)acrylate, hydroxyethyl(meth)acrylate, diethylene glycol diacrylate, trimethylolpropane triacrylate, 1,6 hexanediol di(meth)acrylate, neopentyl glycol di(meth)acrylate, and mixtures thereof.

The amount of suitable solvent in the non-dispersed **water-based** coating comp

----- 6017862
classes:1 510/163 1 510/175 1 510/176 1 510/201
score: 356

keywords: glycol ether;pyrrolidone;dimethyl;dipropylene glycol;dipropylene;glycol methyl;propylene glycol

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;propylene;glycol ethers;ethers;cyclic;ketones;ethyl acetate;N-methyl pyrrolidone;pyrrolidone;N-methyl;calcium;organic;liquid;polymer;dry;vinyl;ether;resin;methyl;aqueous;esters;ethyl;glycol;acetate;propyl;butyl;tetrahydrofuran;ethylene glycol;hydrocarbon;nitrogen atom;nitrogen;heterocyclic;unsaturated;surfactant;inorganic;polymeric;dissolved;water-soluble;dimethyl;dipropylene glycol;dipropylene;glycol methyl;propylene glycol;propylene;glycol ethers;ethers;cyclic;ketones;ethyl acetate;N-methyl pyrrolidone;pyrrolidone;N-methyl;calcium;organic;tetrahydrofuran;fair;

- lected from claim 7 above. Examples of these **glycol ethers** are ethylene **glycol methyl ether**, diethylene **glycol methyl ether**, ethylene glycol ethyl ether, diethylene glycol ethyl ether, ethylene glycol propyl ether, diethylene glycol propyl ether, ethylene glycol butyl ether, diethylene glycol butyl ether, methyl methoxybutanol, **propylene glycol methyl ether**, **dipropylene glycol**, **dipropylene glycol methyl ether**, **propylene glycol propyl ether**, **dipropylene glycol propyl ether**, **propylene glycol butyl ether**, and **dipropylene glycol butyl ether**. In the composition listed R.sub.10, R.sub.11 and R.sub.12 can be a number C.sub.1 to C.sub.10 alkyl, preferably C.sub.1 to C.sub.6 alkyl, more preferably C.sub.1 to C.sub.4 alkyl. Among the most preferred are **propylene glycol butyl ether**, **dipropylene glycol methyl ether**, **dipropylene glycol**, methyl methoxy butanol and diethylene glycol butyl ether. Preferably, the **pyrrolidone** component of the m